

MBR 70



ORION

INSTALLATION MANUAL

MBR 70

MULTIPLE BATTERY REGULATOR

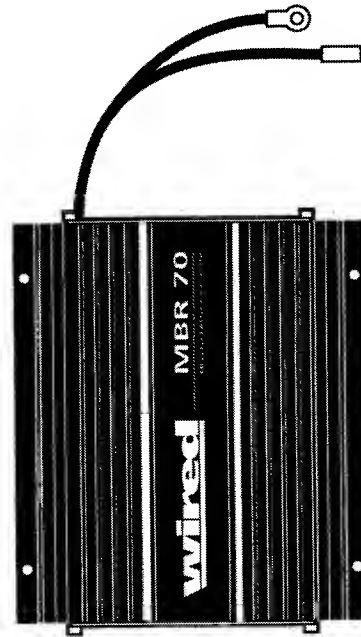
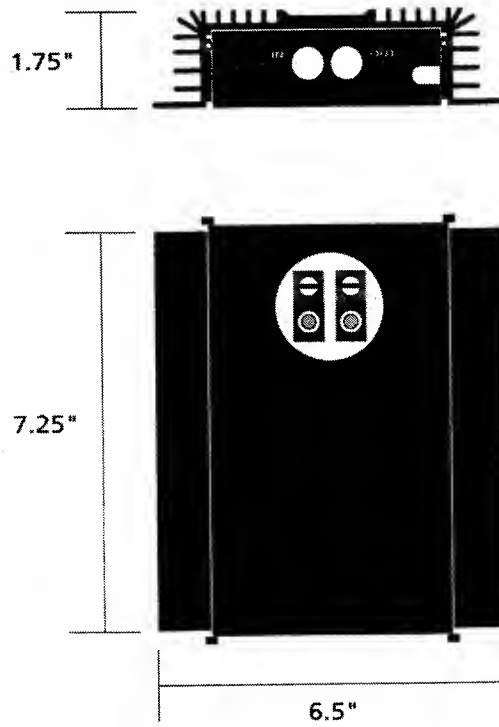
Specifications

Minimum voltage for charge

12.6V

Maximum charge rate

70 amps



INTRODUCTION

You have purchased the finest voltage protection/charging system available on the market today. The Wired MBR 70 incorporates the latest technological advancements to exceed current measurement standards of performance, craftsmanship and reliability.

Your MBR 70 includes these built-in features:

- Isolates batteries when ignition is off.
- Mounts in front or rear of vehicle.
- Senses charge voltage of auxiliary batteries.
- Brings charge voltage up on the vehicle's battery, then begins charging the auxiliary batteries.
- Enables the stereo system to draw off all the batteries when engine is running.
- Can be installed without cutting into factory harnesses.
- Has LED's to inform of, POWER and CHARGE status.

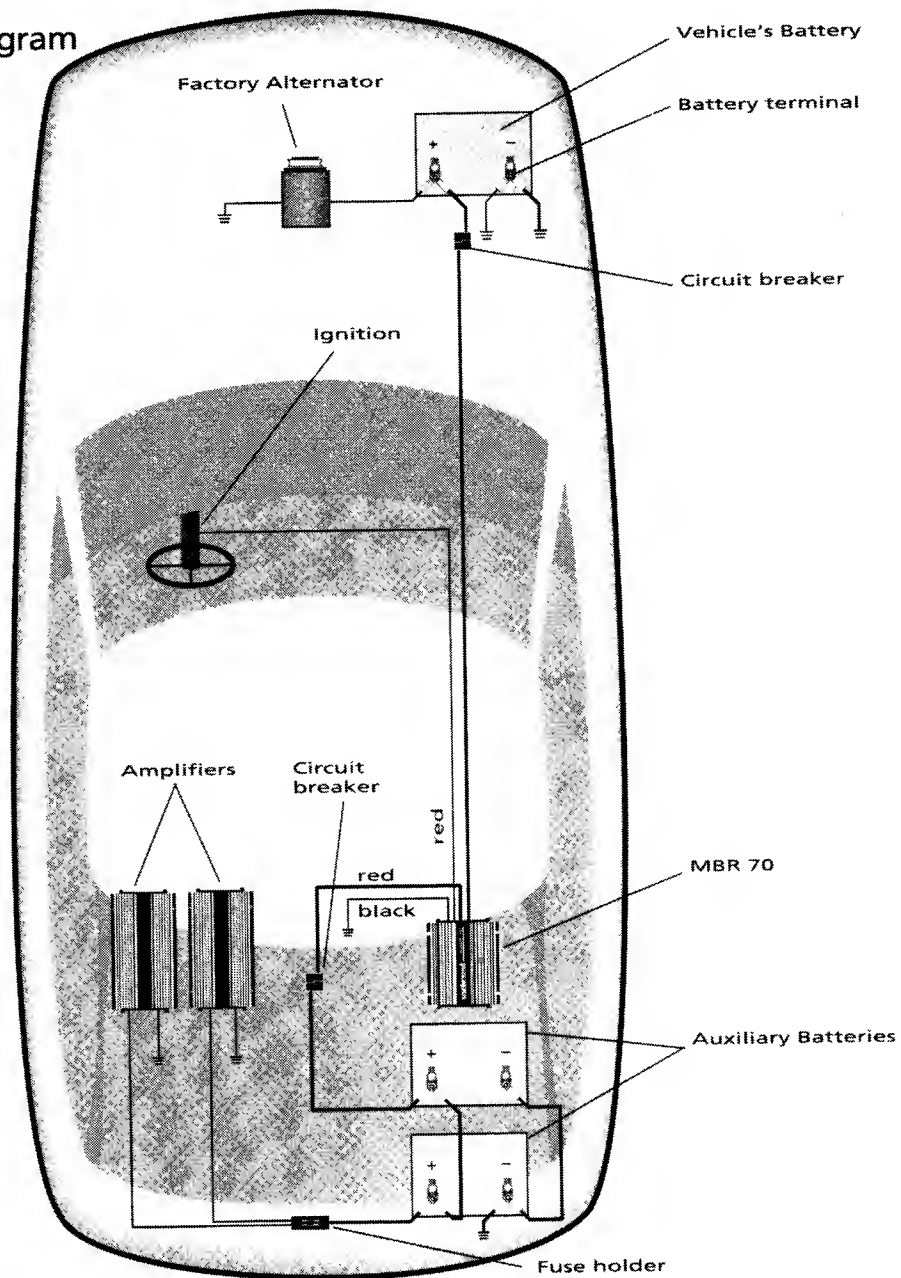
Wired's MBR 70 takes a totally new approach to ensure proper voltage levels in multiple battery systems. The MBR 70 is a "smart" regulator / isolator that senses the needs of the vehicle's battery and any additional batteries. Unlike conventional battery isolators, the MBR 70 requires no cutting into the factory electrical system. It allows all the batteries in your vehicle to become a collective voltage source.

The MBR 70 ensures the proper voltage level in the vehicle's battery by concentrating solely on that battery until it sees a charge voltage above 12.5 volts. Once this voltage level has been established, the MBR 70 couples all the batteries so they can all be charged.

When your engine is running, the MBR 70 allows the alternator to feed the auxiliary batteries a regulated charge up to 70 amps.

When the ignition is turned off, the MBR 70 becomes a "one-way gate", isolating the current in the vehicle's battery from passing through to the auxiliary batteries. This "one-way gate" ensures that the vehicle's battery will always have enough charge to start the car, regardless of the charge level in the auxiliary batteries.

Wiring diagram



INSTALLATION

Tools Required

- Electric drill / drill bits
- Phillips and flathead screwdrivers
- Wire cutters / strippers
- Wire brush and emery sand paper
- Soldering iron and solder
- Felt tip pen or center punch
- Volt / ohm meter
- Utility knife
- Pliers (standard and needle nose)
- Wire crimping tool
- Rubber grommets
- Nylon tie wraps
- Heat shrink tubing
- Electrical tape

Required Parts (not included in this package)

- 4 gauge Wired Power Cable (length varies depending on installation)
- Two Wired battery terminals per battery, one positive and one negative.
- Four wired ring terminals per battery, two positive and two negative.
- Two Wired 100 Amp circuit breakers and four positive ring terminals.
- Number 10 self tapping metal screw (to attach MBR 70's ground wire to chassis)
- 3/8" lug connector, nut, bolt and two flat washers (one set per battery)
- One Wired Distribution Block.

General Precautions

Before installation, make sure you select a dry location that will provide adequate ventilation around the MBR 70. The heatsink has fins to couple generated heat to the surrounding air space via thermal conduction. We recommend that you mount the MBR 70 flat on the floor of the trunk or under the hood, in a location that will protect it from water damage. Remember, heat travels up away from the heatsink fins.

Improper wiring connections can seriously damage the MBR 70 and your vehicle. Be sure to carefully follow the connection instructions in this manual. *NOTE: If you are not sure of the connections, contact your dealer.*

When making power connections, make sure that each connection is clean and properly secured. Failure to do so may result in damage to the MBR 70 and your vehicle. In addition, please observe these precautions.

- **Mount the MBR 70 in a dry location.**
 - **Do not mount the MBR 70 on a plastic surface or other low combustion point material.**
 - **Do not place a glass or metal cover over the MBR 70 unless you have a cooling fan at one end. Direct cool air along the length of the fins, rather than across them.**
 - **Do not use more than 2 auxiliary batteries per MBR 70.**
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WIRING & MOUNTING

1. Select mounting location of the auxiliary batteries and the MBR 70. Make sure you observe the General Precautions listed on the previous page.
2. Use a multi-meter or test light to locate the ignition wire at the fuse box. Be sure that it reads 12 volts positive (+) when the engine is running and 0 volts when the ignition switch is off (not on accessory). Mark this wire with a piece of electrical tape.
3. With the ignition off, disconnect the negative (-) lead and positive (+) lead from the vehicle's battery.
4. Install auxiliary battery(s) with manufacturer's approved hardware.
5. Mount a 100 amp circuit breaker within 18 inches of the vehicle's battery.



WARNING: Failure to install a circuit breaker at this location could result in severe damage to the MBR 70 and your vehicle.

6. Route a 4 gauge power wire from the fuse holder to the proposed location of the MBR 70. At convenient points, fasten the power wire to the vehicle's body with tie wraps. Use this technique to keep the wire from dangling across engine components. Use rubber grommets where power wire penetrates sheet metal.



CAUTION: Do not connect the power wire to the battery terminal at this time.

7. Position the MBR 70 and use either a felt-tip pen or center punch to mark locations for the mounting holes. Drill a small pilot hole at each marked location.



CAUTION: Do not drill into the fuel tank, fuel lines, brake lines (under chassis), or through any electrical wiring.

8. Mount a 100 amp circuit breaker within 18 inches of the auxiliary battery(s).



WARNING: Failure to install a circuit breaker at this location could result in severe damage to the MBR 70 and your vehicle.

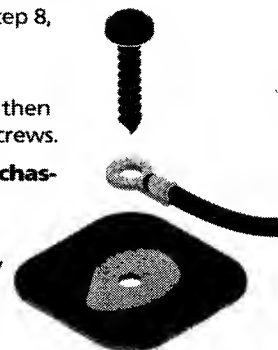
9. Remove the plastic plug on bottom of the MBR 70, insert the 4 gauge power wire coming from the circuit breaker mounted in step 5, into the lug marked IN, then insert a 4 gauge power wire coming from the circuit breaker mounted in step 8, into the lug marked OUT.

10. Be sure to check both lugs to make sure you have made a solid and tight connection with the set screws. Snap plastic plug back into the access hole, then mount the MBR 70 securely in the desired location with four self-tapping screws.



CAUTION: Do not drill into the fuel tank, fuel lines, brake lines, (under chassis) or through any electrical wiring.

11. Locate a metal chassis component that is within the reach of the MBR 70's attached ground (black) wire. Cut away any carpet and scrape off the body paint to expose bare metal. Be sure to clean the area with sandpaper until you see a bright, shiny finish.



12. Drill a small pilot hole ($\frac{1}{8}$ " diam.) in the selected area and use a No. 10 self-tapping screw to securely attach the crimped lug (on the end of the ground wire) to the metal chassis.



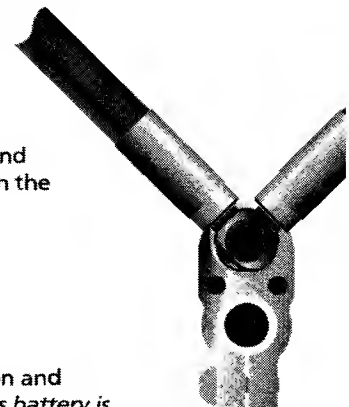
CAUTION: Do not drill into the fuel tank, fuel lines, brake lines, (under chassis) or through any electrical wiring.

13. After the ground has been properly attached, cover the exposed bare metal with paint or grease to prevent rust.
14. Route the red wire from the MBR 70 along the vehicle's interior wiring channels until it reaches the ignition wire you previously marked with tape in step 2. Make the appropriate connections and watch for any sharp edges on passage holes. Use rubber grommets where ignition wire penetrates sheet metal.
15. Locate a metal chassis component that is within 18 inches of the auxiliary battery(s). Be sure to clean the area with sandpaper to expose bare metal. Drill a $\frac{3}{8}$ " hole in the selected area.



CAUTION: Do not drill into the fuel tank, fuel lines, brake lines, (under chassis) or through any electrical wiring.

16. Use a battery terminal and ring terminals to add a 4 gauge ground wire from the auxiliary battery's negative (-) post to the chassis. Securely attach the wire using a $\frac{3}{8}$ " lug connector, bolt, nut and flat washers.
17. Connect the 4 gauge power wire coming from the OUT lug on the MBR 70 to the 100 amp circuit breaker mounted in step 8.
18. Connect the 100 amp circuit breaker to the auxiliary battery(s) positive (+) terminal with a 4 gauge power wire.
19. Use a battery terminal and ring terminals to add an additional 4 gauge ground wire from the vehicle's negative (-) battery post to the chassis. Securely attach the wire using a $\frac{3}{8}$ " lug connector, bolt, nut and flat washers.
20. Check all wiring and mounting to verify proper installation, and make sure the vehicle's ignition switch is OFF.
21. Use a battery terminal and ring terminals to connect the vehicle's positive (+) battery lead to the circuit breaker mounted in step 5.
22. Start engine, and check the status LED's on MBR 70. The MBR 70 should be on and should show charging status within a couple of minutes. *Note: If the vehicle's battery is low, auxiliary battery charging will not start until vehicle's battery has a charge voltage of 12.5 volts.*



**BATTERY
TERMINAL**

WARRANTY & SERVICE

ORION warrants this product to be free from defects in material and workmanship under the following terms:

PARTS and LABOR are warrantied for a period of 1 year from the date of the first consumer purchase from an Authorized ORION Dealer. Except as specified below, this warranty covers ALL defects in material and workmanship in this product. The following are not covered by this warranty:

1. Any product which is NOT purchased from an Authorized ORION Dealer. If you are uncertain as to whether your dealer is authorized, please contact ORION (480) 705 5600. In countries other than the USA, each distributor warranties the ORION products which it sells.
2. Any product which the serial number has been defaced, modified or removed.
3. Damage of malfunction resulting from;
 - a. accident, misuse, abuse, unauthorized modification or failure to follow the instructions provided with the product
 - b. repair by anyone NOT authorized by ORION
 - c. damage due to shipping (these claims must be presented to the freight carrier)
 - d. removal or installation of the product
 - e. any failure that has NOT been caused by a defect in material or workmanship

This warranty is in effect for the original purchaser only. ORION will pay for labor and material expense for covered items. ORION does not cover removal or installation charges, payment of shipping charges to ORION, payment of OUT-OF-WARRANTY shipping charges, or damage to other property caused by any defects in this product.

To obtain service, take or ship the product (pre-paid) in its original packaging, if you do not have the original packaging the product must be packed so no damage will incur to the product during shipment to:

ORION
Attn: Repair Department
9235 S. McKemy Street
Tempe, AZ 85284

For IN-WARRANTY service you must include a copy of the original, dated sales receipt, including serial number, from Authorized ORION Dealer. Please also enclose your name, return address (No P.O. Boxes) and a detailed description of the problem.

This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.



9235 South McKemy Street Tempe, Arizona 85284 480.705.5600